

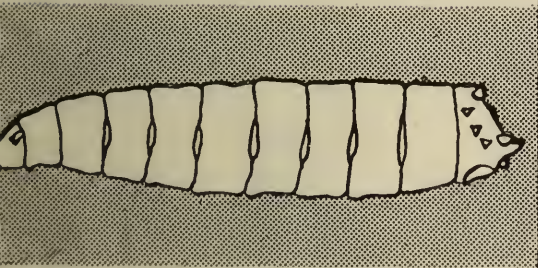
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Control of the
Cabbage Maggot
in British Columbia

by A.R. FORBES
and K.M. KING

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CONTROL OF THE CABBAGE MAGGOT IN BRITISH COLUMBIA

by

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The cabbage maggot¹ is the most serious insect pest of cabbage, cauliflower, and radish in British Columbia. It also attacks broccoli and brussels sprouts. The turnip maggot² occurs in some localities in the Province along with the cabbage maggot, attacking the same crops, and appearing in greatest numbers during August. Control methods given here apply to both species.

Cabbage and cauliflower are severely damaged in the seedbed and in the field. Early crops are most seriously affected, but radishes are attacked throughout the growing season.

DESCRIPTION AND LIFE HISTORY

The maggot (cower) is the larva, or early stage, of a fly that resembles the common house fly but is somewhat smaller. The flies may be seen in the field close to the ground near the plants from late April to late October. The female flies lay small, white eggs in the soil near the roots of the plants. Eggs are laid



ADULT FLY



EGG



PUPARIUM

¹ *Hylemya brassicae* (Bouché)

² *Hylemya floralis* (Fall.).

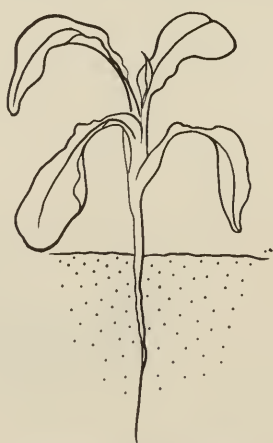
during most of the growing season. The eggs hatch in three to five days and the small, white, legless maggots move to the roots and begin to feed. They feed for about three weeks and grow to about a third of an inch long. When full-grown the maggots stop feeding, move into the soil near the plant, and change into brown puparia, which look like large grains of wheat. In two to three weeks, adult flies come out to mate, lay eggs, and repeat the cycle. There are usually three cycles, or generations, a year in British Columbia. In the last generation of the season, the time in the puparia is much longer so that the flies do not come out until the following spring.



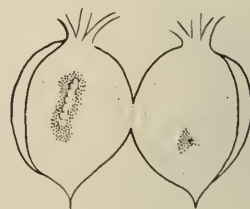
In spring the flies come out of the ground from the puparia of the year before during a period of about a month and a half. This means that the generations overlap later in the season and that all stages may be found in the field at one time.

DAMAGE

In cabbage, cauliflower, broccoli, and brussels sprouts, the maggots feed on both the small roots and the taproots. In the seedbed and in newly transplanted fields, a single maggot boring up the main root may kill the plant. Later when the plants are larger, it takes many maggots to kill a plant. Heavily attacked plants are gray-green and wilt on hot days. Up to 90 per cent of untreated plants may be killed in some seasons. Plants heavily attacked but not killed give poor yields.



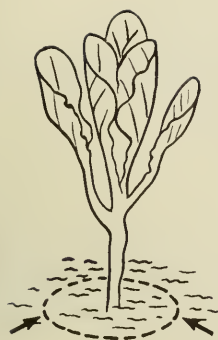
**MAGGOTS DESTROY
SMALL ROOTS**



**MAGGOT IN
RADISH**

In radishes the maggots tunnel in the fleshy roots, making them unmarketable. A single maggot injury may spoil a radish.

CONTROL



SPRAY OR DUST HERE

With cabbage, cauliflower, broccoli, and brussels sprouts, it is important to prevent infestation during the first two or three weeks after transplanting. It is not necessary to prevent all infestation later. Radishes must be protected at all times.

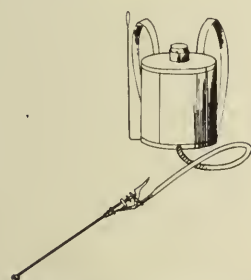
Aldrin and heptachlor are the most effective insecticides for controlling the maggots. The chemical must be placed where the young maggots will come in contact with it upon hatching from the eggs.

Details of control procedures follow.

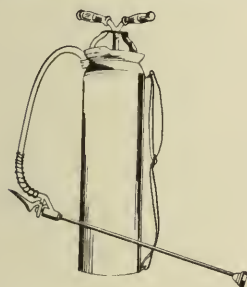
Transplants of Cabbage, Cauliflower, Broccoli, and Brussels Sprouts



PUFFER-DUSTER



KNAPSACK SPRAYER



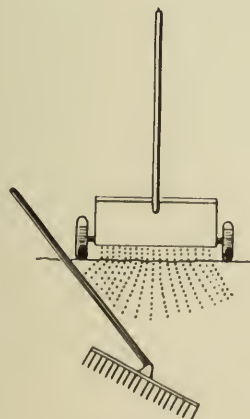
COMPRESSED-AIR SPRAYER

1. Within three days after transplanting, apply $2\frac{1}{2}$ per cent aldrin dust or $2\frac{1}{2}$ per cent heptachlor dust to the soil around the base of each plant by means of a puffer-duster, using one or two puffs per plant. This rate is equal to about 40 pounds per acre. In gardens use 1 teaspoon of either material per plant. If the plants are hilled, repeat the treatment soon after hilling.

OR

2. Within three days after transplanting, wet the soil around each plant with a dilute spray made of 2 quarts of aldrin emulsifiable concentrate (containing 2 pounds of aldrin per gallon), or 2 quarts of heptachlor emulsifiable concentrate (containing 2 pounds of heptachlor per gallon), in 50 gallons of water. Apply about 4 ounces of the spray per plant, using a compressed-air, knapsack, or other suitable sprayer. For gardens use 1 cupful (8 fluid ounces) of the emulsifiable concentrate in 5 gallons of water and pour $\frac{1}{2}$ cupful of the dilute spray around each plant.

Seedbeds of Cabbage, Cauliflower, Broccoli, and Brussels Sprouts

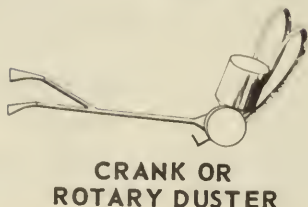


FERTILIZER CART

1. Treat the soil with aldrin or heptachlor before seeding. Use $3\frac{1}{2}$ to 4 pounds of $2\frac{1}{2}$ per cent dust per 1,000 square feet. Apply the dust evenly over the soil surface with a fertilizer cart and rake it in to a depth of 1 or 2 inches.

OR

2. Dust the seedlings when they come up and again ten days later with $2\frac{1}{2}$ per cent aldrin dust or $2\frac{1}{2}$ per cent heptachlor dust at $1\frac{1}{4}$ pounds per 1,000 square feet. Use a rotary or other suitable duster.



Radish

1. Dust the seeds in the furrow with $2\frac{1}{2}$ per cent aldrin dust or $2\frac{1}{2}$ per cent heptachlor dust at 3 pounds per 1,000 feet of row.

OR

2. Dust the seedlings as soon as they come up and twice again at seven-day intervals, with $2\frac{1}{2}$ per cent aldrin dust or $2\frac{1}{2}$ per cent heptachlor dust at 1 pound per 1,000 feet of row.

Address further inquiries to: Provincial Entomologist, Court House, Vernon, B.C.; or Officer in Charge, Entomology Laboratory, c/o University of British Columbia, Vancouver 8, B.C.; or Officer in Charge, Entomology Laboratory, Box 210, Kamloops, B.C.; or any district agriculture office in British Columbia.

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